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**DECLARATION OF PROFESSOR KEVIN ALMEROTH REGARDING
CLAIM CONSTRUCTION FOR U.S. PATENT NO. 5,925,106**

1 I, Kevin Almeroth, hereby declare:

2 The statements contained in this Declaration are true and correct. If called as a
3 witness, I would testify thereto under oath.

4 I have been retained by Plaintiff and Counterclaim-Defendant NetApp, Inc. to
5 offer opinions regarding certain claim terms in U.S. Patent No. 5,925,106 ("106 patent").

6 **I.**

7 **QUALIFICATIONS**

8 I am a professor of Computer Science, have been Vice Chair of the Department of
9 Computer Science, and I am currently Associate Dean of the College of Engineering at the
10 University of California, Santa Barbara. I am advisor to several technology companies and
11 organizations. My qualifications to render an expert opinion in the matter are set forth in my
12 Curriculum Vitae, which is attached as Exhibit A. My C.V. also contains a list including all
13 publications authored in at least the last 10 years.

14 **II.**

15 **STATEMENT OF OPINIONS – '106 PATENT**

16 A summary of my opinions regarding certain claim terms in the '106 patent is set
17 forth below. I reserve the right to modify or supplement my opinions as appropriate.

18 **A. ORDINARY SKILL IN THE ART**

19 One of ordinary skill in the art relevant to the '106 patent in 1996 would generally
20 have the following education and experience: a bachelor's or master's degree in Electrical
21 Engineering or Computer Science, or equivalent experience, and several years experience in
22 studying, designing, or using computer network systems making up the Internet.

23 My opinion is based upon my personal knowledge and experience and my
24 consideration of the following factors: (1) the levels of education and experience of persons of
25 skill working in the field; (2) the types of problems encountered in the art; (3) the prior art patents
26 and publications; (4) the activities of others; (5) prior art solutions to the problems encountered by

1 the inventor; (6) the sophistication of the technology; and (7) the rapidity with which innovations
2 are made.

3 **B. BACKGROUND**

4 One of ordinary skill in the art reading the '106 patent in 1996 would have
5 understood that it is directed generally to a computer system intended to make it easier for
6 inexperienced users of the World Wide Web to understand the origin of the Internet web pages
7 they view with their web browsers. In 1996 the World Wide Web (WWW) was growing in
8 popularity; but many users were completely inexperienced with any aspect of computer networks.
9 Use of the web relies heavily upon Internet domain names and URLs. Internet domain names are
10 registered in the Internet's registry of domain names and linked to server IP addresses through the
11 Internet's Domain Name System (DNS). Uniform Resource Locators (URLs) are used to access
12 web pages on the Internet. According to the patent, Internet domain names and URLs were often
13 ambiguous, non-descriptive, or complex, and therefore intimidating and difficult for
14 inexperienced users to understand. See '106 patent at 1:54-2:3. According to the '106 patent
15 applicant, "WWW users often become disoriented while navigating through the WWW....
16 [despite that] each WWW page (webpage) is stored on a specific server.... [i]n the prior art, this
17 connection between server and information is not clearly indicated." See id. at 1:45-53. The
18 patent further asserts that inexperienced users were therefore unable "to accurately identify the
19 organization that provides the server," and therefore lacked a basic understanding of "the
20 information structure of the WWW." See id. at 2:4-7.

21 The alleged invention of the '106 patent attempts to overcome this supposed
22 limitation by displaying information about the server providing a given web page, and in
23 particular its proprietor. This will supposedly help the inexperienced user of the WWW to gain a
24 better understanding of the origin of information displayed in Internet web pages. Many systems
25 and methods for collecting and displaying information about servers on the Internet already
26 existed. The '106 patent is narrowly directed to providing a friendly way to identify web pages to
27 novice users in a non-intimidating format:

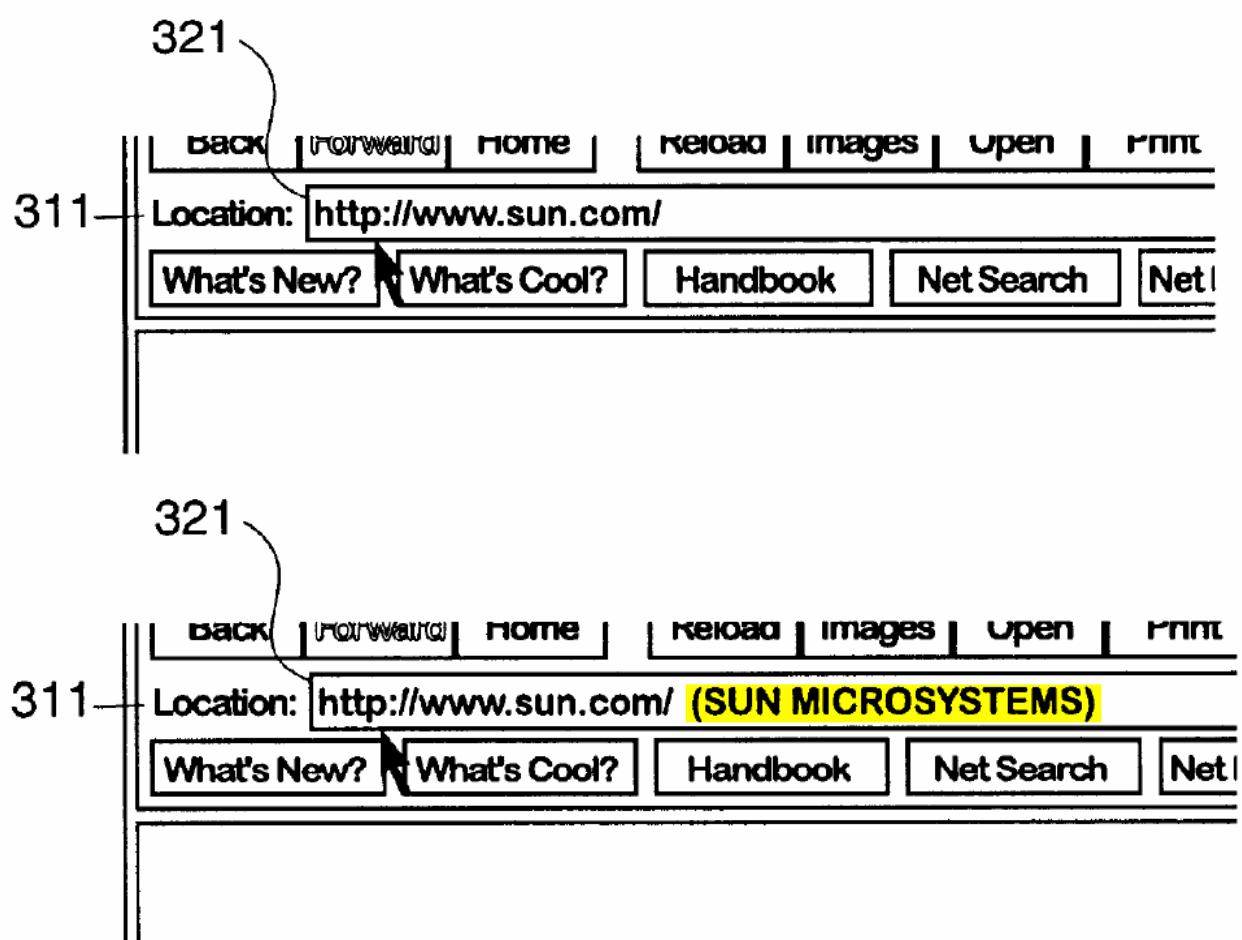
1 WWW browser users need to have access to information about a
 2 server to better understand the information structure of the WWW.
 3 That is, the connection between server and information residing on
 4 the server must be clear. Further, the maintainer of a server would
 5 like to be able to display data that describes the server to the user of
 6 a WWW browser. This can be accomplished by displaying, for the
 7 example above:

8 http://www.sun.com/index.html (Sun Microsystems, Inc.
 9 WWW server)

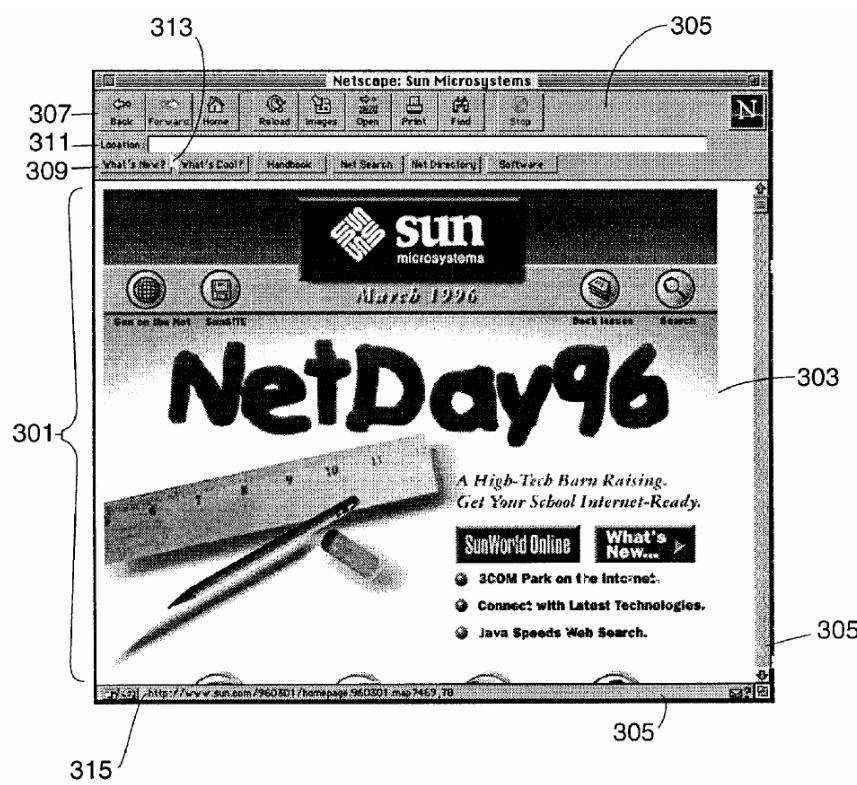
10 With the server's identification data appended to the URL, the
 11 connection between the server and the information it provides is
 12 clearly indicated. Thus, a WWW user knows more about the
 13 informational structure of the WWW.

14 '106 patent at 2:7-20.

15 As noted in the passage above, the descriptive information is appended as a
 16 parenthetical addition to the URL in the location bar of a web browser. The prior art and the
 17 supposedly inventive aspect are depicted in Figures 3B and 3C respectively:



1 The claimed invention therefore takes information already available about Internet
 2 domain names and displays that information to a novice user of the WWW. Such information is
 3 available through services like whois. Indeed, the patent even claims accessing the information
 4 from the whois service if the web server is not configured to provide it. See, e.g., id. at 10:65-67.
 5 The claimed invention involves placing readily available information specifically in the location
 6 bar of the web browser, in contrast to the other locations for displaying such information that
 7 were already utilized in the cited prior art systems. See id. at Fig. 3A:



Consistent with the object of the invention, the claimed apparatus and method
 exploit the already-existing features of HTML, HTTP, existing web browsers, and the Domain
 Name System (“DNS”), as well as utilities used to access information available through DNS and
 the Internet’s domain name registry, in order to inform inexperienced users about the origin of the
 information they are viewing.

C. THE DISPUTED TERMS

1. **“Domain Name” (Claims 1, 9, 14, 22, 27, and 35)¹**

One of ordinary skill in the art at the time the '106 patent's application was filed in 1996 would have understood that the term "domain name" in the claims of the '106 patent means "a third-party-approved name of a website on the Internet, i.e. a registered domain name."

BASIS AND REASONS:

The term “domain name” is understood in the art to refer to an address of a computer on the Internet, where the address is approved by a third party and stored in the Internet’s registry of domain names. A domain name is resolved to the numerical IP address of a given computer using the Domain Name System. The numerical IP address is used to access that computer over the Internet via the TCP/IP suite or a service protocol. This is my understanding of the term’s meaning in 1996; and the term’s use in the claims is consistent with this understanding.

The specification of the '106 patent supports this understanding. For example, in the Background section, the specification explains that:

WWW sites (websites) are accessed through use of their domain names (e.g., www.sun.com) or IP address (e.g., 45.212.23.1). Domain names are requested by maintainers of the website and are *approved by a third party*. These addresses and domain names must be unique...

The domain name is embedded in the URL. For example in:
<http://www.sun.com/index.html>

the `www.sun.com` is the domain name for the server. Even if the domain name is unambiguous, its placement in the URL is intimidating to inexperienced users of the WWW.

See id. at 1:54-2:3 (emphasis added).

¹ References to claim numbers in this declaration are intended as reference aids, but do not limit the scope of my opinions. To the extent the terms defined in this report are found in claims other than those listed, the same terms in all claims share the same definition unless otherwise noted.

1 One of ordinary skill in the art would understand this quotation to be defining the
2 term “domain name” in the context of the well-known system of Internet domains governed by
3 the Internet’s domain name registry. This quote references the process of acquiring third-party
4 approval to use a specific domain name (a process called “registration”). The passage mentions
5 that the domain names must be unique and are a part of a Uniform Resource Locator. This
6 passage further specifies that domain names are used as addresses for websites.
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8 Other portions of the specification also make clear that a domain name is a
9 registered Internet domain name. For instance, the patent describes accessing server
10 identification data “[u]sing methods well understood in the art” to send the request ““GET
11 http://domainna-me[sic]/servername.txt HTTP/1.0’ where ‘domainname’ is a standard Internet
12 domain name such as ‘www.sun.com’.” See id. at 7:32-36. One of ordinary skill in the art would
13 know that this passage describes an HTTP transaction utilizing a URL containing a registered
14 domain name. The phrase “standard Internet domain name” would have made this point even
15 plainer to one of ordinary skill in the art.
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17 The specification further describes the invention utilizing the whois utility, or
18 using the “X.500 application to access an Internet name server.” See id. at 7:50-53. Both whois
19 and Internet name servers would have been known to one of ordinary skill in the art as techniques
20 to look up information about a server based on a registered domain name.
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22 In addition, the Netscape browser discussed in the ’106 patent at 5:15-32, and
23 depicted in Figures 3A-4B, would have been known to one of ordinary skill in the art to perform
24 the function of DNS resolution, and is depicted doing so using registered domain names and
25 URLs in these figures. Figure 2, labeled “prior art” depicts a web browser connecting to a web
26 server through the Internet. One of ordinary skill in the art would have known that this is done
27 with registered domain names. Figures 4C, 8, and 9 all depict using URLs to access web pages.
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1 As stated above, and acknowledged in the specification at 1:65, one of ordinary skill in the art
2 would understand that a URL for accessing a web page on the Internet comprises, in part, a
3 registered domain name (or an IP address). See T. Berners-Lee, Uniform Resource Locators
4 (URL), RFC 1738, Dec. 1994, at 3.1, defining the “host” component of the URL as “The fully
5 qualified domain name of a network host, or its IP address as a set of four decimal digit groups
6 separated by ‘.’. Fully qualified domain names take the form as described in Section 3.5 of RFC
7 1034 and Section 2.1 of RFC 1123.” RFC 1738 is cited prior art to the ’106 patent. Consistent
8 with these facts, every example of a URL depicted in the patent includes a registered domain
9 name as part of the URL. Moreover, a person of ordinary skill in the art reading the patent would
10 have known that the domain name, “www.sun.com,” was registered to Sun Microsystems.
11

12 This construction of “domain name” is also supported by the file history. When
13 responding to the examiner’s rejections the applicant distinguished “domain names” from the
14 “additional information about the server” on the grounds that “*Unlike domain names*, this
15 additional information need not be unique *nor approved by a third party*.” Amendment A, Dec.
16 22, 1997, (’106 File History) at 3 (emphasis added). Thus, the applicant explicitly admitted that
17 the term “domain name” means a registered domain name, and did so in order to demonstrate the
18 supposed difference between the claimed invention and the prior art. Indeed, the applicant states
19 that, “The ‘Domain Name’ term is used in accordance with standard usage in the field. It is
20 provided to a nameserver to return an IP address.” Id. at 6. This statement strengthens the view
21 that one of ordinary skill in the art would understand this term to mean a registered domain name.
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23 Finally, the definition above is consistent with the ordinary meaning of “domain
24 name” in the computer networking field. For example, the Microsoft Press Computer Dictionary,
25 3d Ed., (1997), as cited by NetApp in Joint Claim Construction and Prehearing Statement, Exh. H
26 [Docket 70-9] defines the term “domain name” to mean “An address of a network connection that
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1 identifies the owner of that address in a hierarchical format: *server.organization.type*. For
2 example, www.whitehouse.gov identifies the Web server at the White House, which is part of the
3 U.S. Government.” The same dictionary defines DNS as “Acronym for **Domain Name System**.
4 The system by which hosts on the Internet have both domain name addresses (such as
5 bluestem.prarienet.org) and IP addresses (such as 192.17.3.4). The domain name address is used
6 by human users and is automatically translated into the numerical IP address, which is used by the
7 packet routing software...” Id. Based on either of these definitions, and especially based on both
8 taken together, one of ordinary skill in the art would understand that a domain name is “a third-
9 party-approved name of a website on the internet, i.e. a registered domain name.”
10

The definition in Webster's New World Dictionary of Computer Terms, 8th Ed. (2000), identified by Sun in the Joint Claim Construction and Prehearing Statement, reflects the same understanding: “**domain name**: in *the system of domain names* used to identify *individual Internet computers*, a single word or abbreviation that makes up part of a computer’s unique name (such as watt.seas.virginia.edu). Reading from left to right, the parts of a domain name go from specific to general...” See Joint Claim Construction and Prehearing Statement, Exh. H [Docket 70-9] (emphasis added). One of ordinary skill in the art would understand that “the system of domain names used to identify individual Internet computers” was the Domain Name System, and that “domain name” therefore means, according to this definition, “a third-party-approved name of a website on the Internet, i.e. a registered domain name.”

23 Sun’s proposed construction, by contrast, cannot be correct. Sun proposes that a
24 “domain name” should mean “a name that has a numerical IP address associated with it.” The
25 dictionary definition provided by Sun does not support such a broad construction. Indeed Sun’s
26 construction is so broad that it encompasses any number of well-known, prior-art systems. For
27 example, since the early days of Unix, private local networks of Unix-based computers stored
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1 static name-to-IP mapping tables, such as the “/etc/hosts” file. Such tables enabled users to
2 establish connections between the Unix-based computers without committing local IP addresses
3 to memory. For instance, a user might use the “Telnet” protocol to open a connection from a first
4 Unix-based computer to another such computer simply by typing “telnet” and then the local name
5 of the computer to which the user wished to connect. Typically, as soon as such a connection was
6 opened, the second computer would provide information to the user on the first computer,
7 describing, at a minimum, the second computer’s name and current operating system. Once the
8 user logged on, a great deal more information about the second computer would typically be
9 displayed to the user. If Sun’s construction were correct, this use of Telnet with the “/etc/hosts”
10 file, would incorporate every limitation of Claim 1. The functionality described above existed
11 long before 1996 and was well known to all those possessing ordinary skill in the art.
12

14 NetApp’s proposed construction is consistent with the specification, the file
15 history, all the cited extrinsic evidence, and my own understanding of the term as it was used in
16 the art at the time.

17 **2. “Server Identification Data” (Claims 1, 4, 9-10, 14, 17-18, 23-24, 27, 30,
18 35-36)**

19 One of ordinary skill in the art at the time the ’106 patent’s application was filed in
20 1996 would have understood that the term “server identification data” in the claims of the ’106
21 patent means “human-friendly information identifying a specific web server designed not to be
22 intimidating to inexperienced users of the World Wide Web.”

23 **BASIS AND REASONS:**

25 The term “server identification data” has no special meaning in the art, and, as a
26 consequence, one of ordinary skill in the art would be required to interpret the phrase’s meaning

1 in light of the language of the claims and the specification. The claims do not offer assistance in
2 understanding the correct meaning of this phrase.

3 The specification of the patent fully supports the definition given above. In the
4 Field of the Invention section, the specification states that the purported invention “present[s]
5 human-friendly server identification information to a user to better indicate the origin of the
6 information.” See id. at 1:15-18. One of ordinary skill in the art would understand this to mean
7 non-technical information of a sort that an inexperienced user would find helpful.

8 Consistent with this understanding, the specification states:

9 WWW users often become *disoriented* while navigating through
10 the WWW.... Often... the domain name is either not descriptive or
11 misdescriptive of the site. For example does www.sun.com refer to
12 the SUN OIL company or to SUN MICROSYSTEMS, Inc.? IP
13 addresses carry no descriptive value whatsoever.... Even if the
14 domain name is unambiguous, its placement in the URL is
intimidating to inexperienced users of the WWW.

15 1:45-47, 1:60-2:3.

16 One of ordinary skill in the art would understand from reading this passage that the
17 contemplated purpose of the invention is to protect “inexperienced users” from disorientation and
18 to present information about the origin of information they are viewing in a way that does not
19 intimidate them. Indeed, Figure 3C and accompanying text disclose a parenthetical statement that
20 the server serving Sun’s webpage as portrayed is Sun Microsystems’ web server: “The server’s
21 identification data includes the text string ‘SUN MICROSYSTEMS’ as descriptive information.
22 The server’s identification data is enclosed in parentheses ‘()’ and separated from the URL by a
23 space.” See id. at 5:40-44.

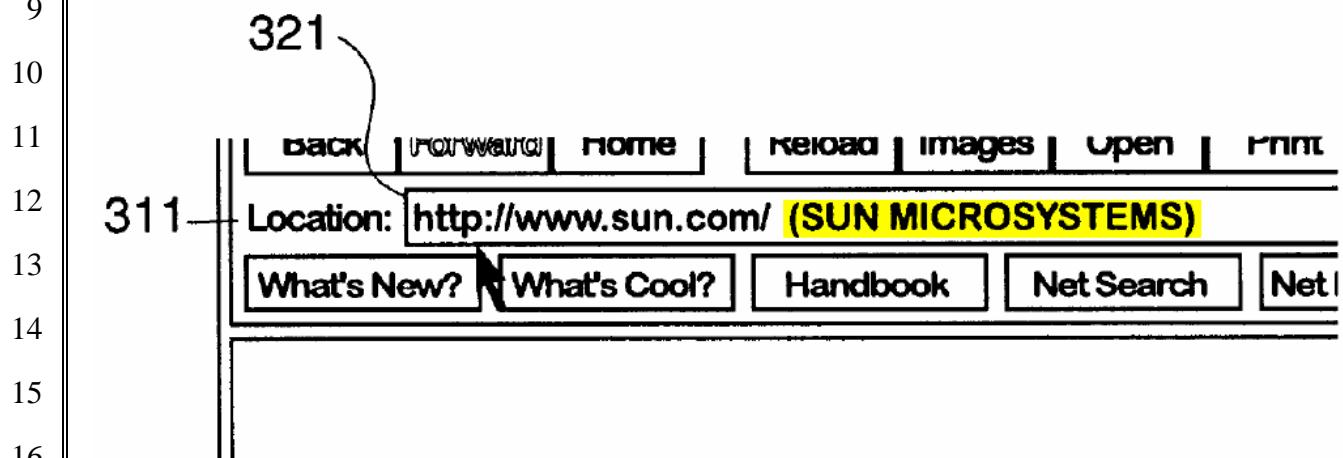
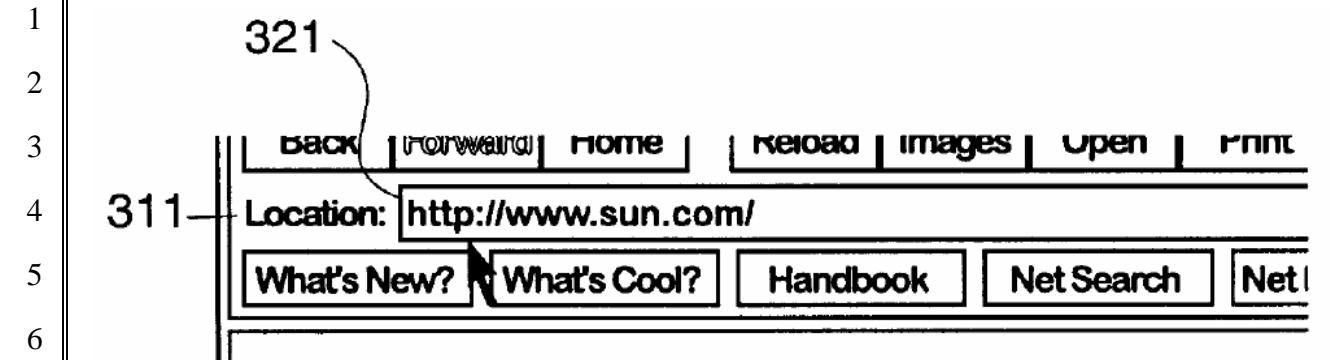
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17 This explanation would lead one of ordinary skill in the art to understand that the
 18 meaning of the term “server identification data” as it is used in the ’106 patent means “human-
 19 friendly information identifying a specific web server designed not to be intimidating to
 20 inexperienced users of the World Wide Web.” Indeed, the only actual example given anywhere
 21 in the entire patent of the type of network being used by the user is the Internet’s World Wide
 22 Web. For instance, 1:1-11 discusses a web browser that provides descriptive server identification
 23 information after the URL in the location bar of the browser. One of ordinary skill in the art
 24 would have understood the description of the preferred embodiment, and the absence of any other
 25 embodiment, combined with the stated purpose of the invention of helping “a user know[] more
 26 about the informational structure of the WWW,” 2:19-20, to mean that the server contemplated in
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1 the specification and the claims is a web server on the Internet, and that the claimed “server
2 identification data” means “human-friendly information identifying a specific web server
3 designed not to be intimidating to inexperienced users of the World Wide Web.” In addition, the
4 discussion of the “domain name” term in the above section of this declaration further supports my
5 opinion that “server identification data” refers specifically to servers providing web pages as part
6 of the Internet’s World Wide Web.
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8 The file history is also consistent with this understanding. In responding to the
9 examiner’s rejections, the applicant stated that, “The invention addresses the problem of
10 identifying and/or describing a server site *to a human user* by providing additional information
11 about the server to the user...” Amendment A, Dec. 22, 1997, (’106 File History) at 3 (emphasis
12 added). The applicant went on to state that, “After a client computer and a server computer have
13 established a connection they communicate over that connection using the HTTP protocol.” Id. at
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15 4. The information is then presented to the user “along with the domain name... hypertext
16 links... URLs.... web page titles.... and bookmarks.” Id. Thus the applicant clarifies that the
17 information must be human-oriented and must be distinct from any of the listed categories of
18 information already available to the user. Moreover, the applicant explicitly states that, “The
19 ‘Server Identification Information’ term is used throughout the application to mean descriptive
20 information about a server that can be seen by the user... The ‘Descriptive information about a
21 server’ term means information provided to a user that describes or identifies the server to the
22 user... whatever information the server site determines *to best identify the site to a user...* or
23 information that can be *appended to a web page title...* or other information that can be displayed
24 to a user *to identify the server of the web page to the user.*” Id. at 5-6 (emphasis added). These
25 statements by the applicant offer further confirmation that the term “server identification data” as
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1 used in the '106 patent means "human-friendly information identifying a specific web server
2 designed not to be intimidating to inexperienced users of the World Wide Web."

3 Sun's proposed construction, by contrast, cannot be correct. Sun proposes the
4 construction, "information that uniquely identifies one server from other servers and can be seen
5 by a user." Sun's construction would read on IP addresses and URLs, because IP addresses and
6 URLs uniquely identify a server and they can be seen by a user. The file history directly
7 contradicts Sun's proposed construction. The applicants responded to the examiner's rejections
8 arguing that "The 'Server Identification Information' term is used throughout the application to
9 mean descriptive information about a server... [and that t]his descriptive information is *not an IP*
10 *address...*" Id. (emphasis added). Because Sun's proposed construction directly contradicts
11 explicit statements made by the applicant in the file history, it cannot be the correct construction.
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14 NetApp's proposed construction is consistent with the specification, the file
15 history, all the cited extrinsic evidence, and my own understanding of the term as it was used in
16 the art at the time.

17 **III.**

18 **MATERIALS REVIEWED**

19 A list of the materials that I reviewed in preparing this report is attached as Exhibit
20 B.

21 **IV.**

22 **COMPENSATION**

23 My compensation for consulting on this matter is \$500.00 per hour. My
24 compensation does not depend on the outcome of this dispute.

1 V.
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3 **PREVIOUS TESTIMONY**
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6 A listing of the testimony I have given in the past four years is attached to this
7 report as Exhibit C.
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9 I declare under penalty of perjury under the laws of the United States of America
10 and the State of California that the foregoing is true and correct.
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14 Kevin Almeroth
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